

Serial No. 10/063,962  
Docket No. 13DV-13657  
Amendment dated August 12, 2005  
Reply to Office Action of May 12, 2005

### **REMARKS**

In the Office Action, the Examiner reviewed claims 1-20 of the above-identified US Patent Application, with the result that independent claims 1 and 14 and their dependent claims 1-3, 5, 9-14, and 18-20 were rejected under 35 USC §102 and/or §103. Specifically:

Independent claim 1 and its dependent claims 3, 5, 7-10, and 13 were rejected under 35 USC §102 as being anticipated by U.S. Patent No. 6,812,176 to Zhu et al. (Zhu);

Independent claim 1 and its dependent claims 3-5, 7-10, and 13 were rejected under 35 USC §103 as being unpatentable over Zhu;

Independent claim 14, dependent claims 11 and 12 (which depend from claim 1), and dependent claims 15 and 17-20 (which depend from claim 14) were rejected under 35 USC §103 as being unpatentable over Zhu in view of U.S. Patent No. 6,025,078 to Rickerby et al. (Rickerby);

Independent claim 1 and its dependent claims 2, 5, 6, 9, and 10 were rejected under 35 USC §103 as being unpatentable over U.S. Patent Application Publication No. 2004/0197580 to Dorfman et al. (Dorfman); and

Independent claim 14, dependent claims 11-13 (which depend from claim 1), and dependent claims 16 and 18-20 (which depend from claim 14)

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were rejected under 35 USC §103 as being unpatentable over Dorfman in view of Rickerby.

In response, Applicant has amended independent claims 1 and 14 as set forth above to recite specific combinations of the oxide additive(s) that are all within the scope of the previous claims, and has amended dependent claims 3, 5-7, 9, and 15-18 for consistency with their respective parent claims. Therefore, Applicant believes that the above amendments do not present new matter, and respectfully requests favorable reconsideration and allowance of claims 1-20 in view of the following remarks.

#### **Rejections based on Zhu**

Zhu was cited for disclosing a thermal barrier coating that contains zirconia ("base oxide"), yttria ("primary stabilizer oxide"), a "group A dopant" (which may be tantala and/or lanthana) in an amount of at least 0.5 molar percent, and a "group B dopant" (which may be neodymia) in an amount of at least 0.5 molar percent. According to the conversion chart attached to the Office Action: if the group A dopant is tantala, tantala is present in an amount of at least 1.7 weight percent; if the group A dopant is lanthana, lanthana is present in an amount of at least 1.3 weight percent; and if the group B dopant is neodymia, neodymia is present in an amount of at least 1.3 weight percent.

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According to Zhu at column 2, lines 16-20, the lower limit of each range disclosed by Zhu is to be interpreted as "at least," thereby expressly excluding any amounts below the stated lower limits. Therefore, Zhu expressly excludes tantalum in any amount less than 1.7 weight percent, lanthanum in any amount less than 1.3 weight percent, and neodymium in any amount less than 1.3 weight percent.

Applicant believes independent claims 1 and 14 are patentably distinguishable from Zhu based on their recitation of the following compositions for the "oxide additive":

up to 10 weight percent tantalum only, which Applicant believes is not disclosed or suggested by Zhu because Zhu permits tantalum only in the presence of a group B dopant (such as neodymium);

up to 4 weight percent lanthanum only, which Applicant believes is not disclosed or suggested by Zhu because Zhu permits lanthanum only in the presence of a group B dopant (such as neodymium);

a combination of tantalum and lanthanum only, which Applicant believes is not disclosed or suggested by Zhu because Zhu permits a combination of tantalum and lanthanum only in the presence of a group B dopant (such as neodymium);

a combination of tantalum and up to 0.6 weight percent neodymium

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only, which Applicant believes is not disclosed or suggested by Zhu because the minimum neodymia content permitted by Zhu is 1.3 weight percent;

a combination of up to 1.0 weight percent lanthana and up to 0.6 weight percent neodymia only, which Applicant believes is not disclosed or suggested by Zhu because the minimum lanthana and neodymia contents permitted by Zhu are 1.3 weight percent; and

a combination of tantala, up to 1.0 weight percent lanthana, and up to 0.6 weight percent neodymia only, which Applicant believes is not disclosed or suggested by Zhu because the minimum lanthana and neodymia contents permitted by Zhu are 1.3 weight percent.

Rickerby was merely cited for disclosing substrate and bond coat materials, and therefore does not appear to be relevant to the above remarks.

In view of the above, Applicant respectfully requests withdrawal of the §§102 and 103 rejections based on Zhu.

#### **Rejections based on Dorfman**

Dorfman was cited for disclosing a thermal barrier coating that contains zirconia and a stabilizer that may be yttria, neodymia, or a combination thereof in an amount of 2 to 25 weight percent. As evident from the above

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remarks under the Zhu rejections, independent claims 1 and 14 recite compositions for the "oxide additive" that do not result in a coating that contains only zirconia, yttria, and neodymia.

As with the rejection based on Zhu, Rickerby was merely combined with Dorfman for disclosing substrate and bond coat materials, and therefore does not appear to be relevant to the above remarks.

In view of the above, Applicant respectfully requests withdrawal of the §103 rejections based on Dorfman.


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**Closing**

For the reasons above, Applicant believes that the claims define patentable novelty over all the references, alone or in combination, of record. It is therefore respectfully requested that this patent application be given favorable reconsideration.

Should the Examiner have any questions with respect to any matter now of record, Applicant's representative may be reached at (219) 462-4999.

Respectfully submitted,

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